CR-BSI (CDC)

From: Robert B. Dawson (rbdawson@comcast.net)
Sent: Thursday, December 3, 2009
To: Centers for Disease Control
Subject: Recommendations for Draft Guidelines for Prevention of Intravascular Catheter Related Infections

My name is Robert Dawson, and I am a Vascular Access Specialist and IV Team member at Concord Hospital in Concord, NH, as well as an educator with PICC Academy and PICC Excellence, Inc. I thank you for the opportunity to respond to the Recommendations for Prevention of Intravascular Catheter Related Infections.

Comments regarding the draft:

1. Currently the draft guidelines state: "Minimize contamination risk by wiping the access port with an appropriate antiseptic (chlorhexadine preferred) and accessing the port only with sterile devices [330, 333, 335]. Category IA". I propose an adjustment to this statement to more accurately reflect the most substantial issue regarding access port disinfection: **clinician practice**. Certainly there is no doubt that access port disinfection is a clinical imperative and must be done with an "appropriate antiseptic", however, to focus on the preference of chlorhexadine as a category IA guideline is premature.

2. I along with countless colleagues from around the country concur that access port disinfection practice is misguided and happenstance. Most notably a cursory wipe of an access port with 70% isopropyl alcohol (IPA) is the actual standard being applied. It is inconceivable to think with such little and inconsistent results comparing disinfectant solutions i.e. IPA vs. Chlorhexadine + IPA, that one solution is more effective than another. Paramount to the lack of sufficient studies is that most of the studies that do exist compare different techniques and use varied methodologies. One study will measure CRBSI rates while using different solutions over a period of 4 months. Another will culture the external surfaces of a catheter and yet another will sample and incubate fluid passed through a needleless access connector. A particular concern with some of the studies being referenced is that they are not consistent with the pathogenic implications for access port manipulation related to catheter blood stream infections. If the prevailing pathogenic theory is that CRBSIs from catheter hub and access port manipulation are promulgated via the intraluminal migration of microbes than study designs that can accurately and directly test the pass through of microbes through a connector or port should be given higher credence than less refined and more patient variable driven ones. Two studies of interest would be Kaler and Chinn (2007) and Menyhay and Maki (2006). These two studies demonstrated access port antisepsis by measuring the pass through of microbial contamination with a flush solution. The solution was collected after it passed though the access port. Subsequent incubation and testing for residual microbial growth provided for some compelling and interesting conclusions.

3. The Menyhay and Maki study compared IPA wipe with a CHG+IPA barrier cap. Though the comparison of solutions was poorly done in that the application and contact times were different, two very good points were made. A 3-5 second scrub with an IPA wipe on a needless

connector was not effective in sufficiently reducing microbial pass through. Contact time with a CHG+ IPA solution of 10 minutes was effective. From this study we can ascertain that there are two methods of access port antisepsis: one being an **active** application with a wipe using friction and the other a **passive** application with a cap, essentially soaking the access port/connector over several minutes. The Menyhay and Maki study served as a stepping-stone for the Kaler and Chin

4. n Study. The progression of the study took a logical extension in that a more direct comparison of disinfectant effectiveness was achieved. Wipe applicators were used containing one of two antiseptic solutions, IPA or CHG + IPA. The wipes were used to provide a scrubbing action with friction to a needleless connector for a period of 15 seconds. This study showed that 15 seconds of scrubbing was adequate with either antiseptic solution in sufficiently reducing microbial pass through of contaminated needleless connectors. Two significant points are made with the Kaler and Chinn study: the method of application is far more important than a particular antiseptic and the method applied for **active** disinfection should constitute friction and a minimum of 15 seconds of time. Neither study provided mind-boggling concepts rather they support the time-tested concepts of antisepsis: appropriate solution applied with friction over a specified amount of time. We apply this concept to skin antisepsis and recommend clear time intervals. I ask that we apply the same principle to access port antisepsis.

5. In regards to direct comparison of IPA vs. CHG+IPA some interesting notes were developed by the Kaler and Chinn study. The CHG containing wipes (3.15%) left a residue on the cap that was sticky in nature. Continued use of this solution may lead to concerns of affecting needless connector function. Certainly, IPA, CHG+IPA and 10% povidone-iodine can all be effective for antisepsis and for skin antisepsis we know that a 2%CHG solution is preferable, however, too little is known about the effects of Chlorhexadine on nonorganic material and much speculation exists over it being more effective than IPA alone for access port disinfection.

6. I strongly encourage the HICPAC Committee Members to see that the most prevailing issue for access port antisepsis is not preference of a chlorhexadine solution but reinforcing appropriate application with respect to product and solution used. I would propose a statement like this: **Minimize contamination risk by disinfecting the access port with an approved antiseptic and method. The technique of application for an antiseptic wipe (active) should constitute vigorous scrubbing of access port septum and threads over a period of 15 seconds. The disinfecting cap (passive) technique should constitute application of cap to the access port and allow dwelling in place per the manufacturers instructions for use.**

Thank you for your time and consideration in this matter of great importance to clinicians and the patients they care for. I welcome any communication on this matter.

Respectfully Submitted,

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